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SCOPING REVIEW

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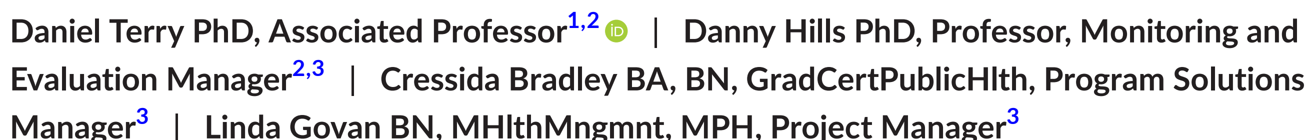
Nurse-led clinics in primary health care: A scoping review of contemporary definitions, implementation enablers and barriers and their health impact



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Abstract

Aims: To define nurse-led clinics in primary health care, identify barriers and enablers that influence their successful implementation, and understand what impact they have on patient and population health outcomes.

Background: Nurse-led clinics definitions remain inconsistent. There is limited understanding regarding what enablers and barriers impact successful nurse-led clinic implementation and their impact on patient health care.

Design: Scoping review using narrative synthesis.

Methods: PubMed, MEDLINE, Web of Science, Scopus, CINAHL and PsycINFO were searched to identify nurse-led clinic definitions and models of care between 2000 and 2023. Screening and selection of studies were based on eligibility criteria and methodological quality assessment. Narrative synthesis enabled to communicate the phenomena of interest and follows the PRISMA for Scoping Reviews (PRISMA-ScR) checklist.

Results: Among the 36 identified studies, key principles of what constitutes nurse-led clinics were articulated providing a robust definition. Nurse-led clinics are, in most cases, commensurate with standard care, however, they provide more time with patients leading to greater satisfaction. Enablers highlight nurse-led clinic success is achieved through champions, partners, systems, and clear processes, while barriers encompass key risk points and sustainability considerations.

Conclusion: The review highlights several fundamental elements are central to nurse-led clinic success and are highly recommended when developing interventional nurse-led strategies. Nurse-led clinics within primary health care seek to address health care through community driven, health professional and policy supported strategies. Overall, a robust and contemporary definition of nurse-led care and the clinics in which they operate is provided.

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Relevance to Clinical Practice: The comprehensive definition, clear mediators of success and the health impact of nurse-led clinics provide a clear framework to effectively build greater capacity among nursing services within primary health care. This, in addition, highlights the need for good health care policy to ensure sustainability.

Patient or Public Contribution: No Patient or Public Contribution.

KEYWORDS
barriers, care, clinic, definition, enablers, health impact, nurse-led

1 | INTRODUCTION

Primary health care (PHC), in most cases, is the first point of contact individuals may have with the health care system. PHC, unlike tertiary health care, occurs in a variety of settings and is delivered by a range of providers. 'Primary care' is principally provided by Family Physicians or General Practitioners (GPs) within a family or general practice setting, however primary care may be slightly different in other international contexts (AIHW, 2022). In contrast, PHC has a much broader focus. It involves the empowering of individuals and communities, impacting policy and action and is an integrated approach to health care that may be provided by public or private providers in settings beyond the tertiary health care setting (WHO, 2022). These settings include, but are not limited to, general practice, aged care, community health, community controlled Aboriginal health, other government non-hospital entities, and other not-for-profit and private businesses, and private businesses (AIHW, 2022). Further, the provision of PHC encompasses a whole suite of health care providers, including nurses and nurse practitioners, who may provide care within a nurse-led clinic. (AIHW, 2022).

However, in many cases, 'what' a nurse-led clinic is or how it functions is often ambiguous, being more at the discretion, understanding, or interpretation of the individual author or researcher. Within the literature, the term 'nurse-led clinic' is frequently used, however, is often loosely based on a formalised or structured health care delivery approach involving a nurse and a client. In some instances, 'nurse-led' remains without any clear definition (Davis et al., 2021; Gordon et al., 2019; Lee, 2023; Wong & Chung, 2006), while in others, what 'nurse-led' means is often left to the interpretation of health care professionals both in and outside the nursing profession (Schmüdderich et al., 2023). Conversely, the term 'nurse-led' has been suggested to be nurses who provide care or perform certain health care actions that others may not be able, do not feel comfortable, or do not want to do. In addition, nurses may 'absorb' or take on key elements of other health professional work (Fernandez, 2007; Karimi-Shahanjarini et al., 2019; Miles et al., 2003; Moulton et al., 2022).

Despite these heterogenous, ill-defined, implicit, or absent definitions of what a nurse-led clinic is, others have attempted to provide insights. Currently, the definition provided by Wong and Chung (2006) is used frequently within the literature while, in other cases, the definition has been modified, developed independently,

What does this paper contribute to the wider global clinical community?

- Nurse-led care and clinics are more well defined to enable their development
- Medical champions and community stakeholder ensure clinic success
- Nurse-led clinics provide holistic and commensurate care and can support general practitioners within the primary health care setting

and informed the health-space where it is situated (Holloway et al., 2023; Schmüdderich et al., 2023). Overall, Wong and Chung (2006), define a nurse clinic as,

> *'… a formalised and structured health care delivery mode involving a nurse and a client … [where] the nurse demonstrates advanced competence to practise in a specific health care area, and functions either independently and/or interdependently with other members of a health care team …. The key interventions … encompass assessment and evaluation, health teaching/counselling, treatment and procedures, and case management. A nurse clinic … employs a holistic approach to address the needs of clients and their families. The key outcome measures are symptom control, prevention of complications, and satisfaction with care'* (p. 366).

Although this definition remains useful, others seek to guide a more contemporary definition (Schmüdderich et al., 2023). Nevertheless, several challenges remain associated with the use and interchangeable terms of 'clinic' (noun) and 'care' (verb). Although nurse-led care may be considered as being provided within the parameters of the nurse clinic, the complexities, and the heterogeneity of what both nurses 'do' is tenuous and complex. Further, the constellation of environments, parameters, and communities in which they 'practice' remains inadequately defined. This leaves any definition, currently within the literature, as somewhat elusive and a significant source of confusion for clinicians, researchers and policy makers (Randall et al., 2017; Schmüdderich et al., 2023).

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In addition to a more contemporary and a more robust definition of nurse-led clinic, it is vital to understand that there are several enablers and barriers that impact on the implementation of successful nurse-led clinics. As such, key parameters that impact the successful implementation of nurse-led clinics include, but are not limited to, positive or negative support among health professionals, specifically GPs, to provide a clinic where a need may arise. Other parameters include the availability of physical space to enact the clinic, administrative support, adequate staff cover to ensure clinic efficiency and ensuring staff are motivated to improve health outcomes among health care consumers. Specific barriers include inadequate role or job descriptions, challenges negotiating with GPs, access to education, lack of time, funding uncertainties, health consumer attendance challenges, availability of appointments and difficulties reaching target populations (Clendon & White, 2001; Hegarty et al., 2013; Howe, 2016; Karimi-Shahanjarini et al., 2019).

Although insightful, a greater in-depth analysis and discussion of these parameters, along with any additional enablers from a wide search of the literature is required. This is to ensure our understanding is comprehensively informed, while also enlightening if or what actions may be required to ensure the on-going success of nurse-led clinics. A deeper scrutiny of the barriers will further enable our understanding regarding how best to address the key challenges already identified. Further, this also creates opportunities to develop strategies that may address or mitigate these and any additional barriers in this endeavour. Overall, a review of the current literature may enable greater understanding of the key issues and potential solutions that inform best practices approaches for the development of nurse-led clinic and their sustainability. Doing so can be expected to realise better outcomes for health care consumers.

Beyond the enablers and barriers impacting nurse-led clinic success, it is the impact that nurse-led clinics have on health care consumers that is also vital to understand. Within the current literature, there are several positive impacts to patient outcomes, such as improved morbidity, mortality, quality of life, along with health care consumers knowledge, compliance and satisfaction (Clendon & White, 2001; Hegarty et al., 2013; Howe, 2016; Karimi-Shahanjarini et al., 2019). Other positive impacts encompass improved care processes, such as greater adherence to clinical guidelines, quality, or standards of care, along with practitioner activity (clinical examinations and the provision of care and advice). Further benefits or impacts include improved resource utilisation in terms of length and frequency of consultations, the frequency of return visits among health care consumers, along with greater ordering of tests, investigations, prescriptions, and referrals (Laurant et al., 2005).

Despite these insights, our current understating is limited regarding the benefit of nurse-led clinics (Hadi et al., 2016; Hegney et al., 2013; Keleher et al., 2009). As such, a scoping review of the literature will assist in more clearly articulating the impact that nurse-led clinics have on patient and population health. Therefore, the aim of this scoping review is to comprehensively identify the elements associated with clearly defining nurse-led clinics in PHC settings. In addition, the review seeks to identify barriers and enablers that impact on their successful implementation and examine what impact they have on patient outcomes and population health.

2 | METHODS

In this scoping review of the peer-reviewed literature, narrative synthesis, as guided by Popay et al. (2006), was used to identify, evaluate, and synthesise textual findings from both quantitative and qualitative research in order to address the aims of this review. The objectives, analysis methods, inclusion and exclusion criteria were developed and documented, following the PRISMA for Scoping Reviews (PRISMA-ScR) checklist (Tricco et al., 2018), to ensure accurate and complete reporting of findings (see S1 file).

2.1 | Search strategy

A broad literature search was conducted over March–May 2023, using PubMed, MEDLINE, Web of Science, Scopus, CINAHL and PsycINFO to identify nurse-led clinic definitions and models described in peer-reviewed literature between 2000 and 2023. The databases were accessed using title, keyword, or abstract and then full text, however, searches within Scopus were narrowed to title and abstract only as vast amounts of unrelated data were captured if full text was included. Key search terms included 'nurse-led' OR 'nurse-led clinic' AND 'model' OR 'model of care' AND ('primary' AND ('health' OR 'care')) OR 'general practice' OR 'family practice' OR 'health centre' OR 'aged care' OR 'residential care' OR 'residential aged care' OR 'nursing home' OR 'hostel' OR 'independent living' OR 'senior living' OR 'community health' OR 'community nurse' OR 'district nurse' OR 'care home nurse' OR 'community mental health' OR 'child and family' OR 'school health'. Word variations and suffixes were also included (see File S2 file for full list). In addition, hand searching and reviewing of reference lists of identified studies was undertaken to uncover any extra studies that may have not been captured by the literature search.

2.2 | Inclusion and exclusion criteria

The reviewed studies included those that were peer-reviewed, original research and were focussed on nurse clinics or nurse-led clinics within PHC settings. Specifically, PHC settings were inclusive of general practice, residential aged care, education, community health, correctional, Aboriginal controlled community health services or Aboriginal medical services, and occupational and domiciliary settings. Further, inclusion criteria encompassed a description within the article of the clinic or how it functioned beyond stating 'nurse-led' clinic. Inclusion criteria also included measurable outcomes of a clearly defined clinic, or discussion or commentary regarding the barriers or enablers relating to nurse-led clinic or its implementation and evaluation.

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Studies were excluded if their focus was solely on multidisciplinary team-led clinics, medical clinics with nurses, or other clinics that included nurses. Further, studies were excluded if they were literature reviews, non-peer reviewed original research or grey literature, or nurse-led clinics based in hospital or associated with tertiary health care settings. If there was ambiguity about whether the nurse-led clinic occurred within a PHC setting, these were also excluded. Lastly, full-text articles published in languages other than English were not reviewed given the issues associated with translation qualities.

2.3 | Study screening

Retrieved articles were exported to and managed using EndNote (version 20) and were initially screened by one reviewer (DT) after duplicates were removed. All studies were initially screened based on titles, keywords, and abstracts to exclude irrelevant articles. In the second round, the remaining full text articles were then assessed independently by two reviewers (DT and DH) and judged against the inclusion and exclusion criteria. Each study was classified as 'include', 'exclude' or 'not sure' in the review. Any discrepancies between the two reviewers were resolved with a third reviewer (CB) until consensus was achieved.

2.4 | Methodological quality assessment

A methodological assessment of each publication was undertaken to ensure the research quality. Due to the heterogeneous nature of each study, the methodological quality of the included articles were assessed using the Critical Appraisal Skills Programme (CASP) checklist for Randomised Control Trials, Cohort studies, or qualitative studies (CASP, 2023). The Good Reporting of A Mixed Methods Study (GRAMMS) checklist was used for mixed methods studies (O'Cathain et al., 2008), while Best Evidence Medical Education (BEME) quality indicators were used where research methods were divergent or not well articulated (Buckley et al., 2009). The quality of the articles was scored as being 'met' (+), 'not met' (−), 'unknown' (u), or 'not applicable' (n/a), with variations of this approach being used according to assessment checklist type. The principles regardless of assessment types were the same, where scores were added to gain a final score of high quality, moderate quality, low quality, or to exclude. Among the included studies, 23 were of moderate quality and 13 were of higher quality (File S3).

2.5 | Data extraction and analysis

Given the diversity of the data, textual data extraction was undertaken as informed by Popay et al. (2006). Following a modified process outlined by Colaizzi (1978), each identified article was read and re-read in order to formulate significant statements and meaning, while formulating interpretation, ideas, accounts and assumptions of what the findings presented. Common or recurring patterns and meanings among key statements and understandings were identified from the review process and were aggregated. In addition, textual data were also extracted from each of the quantitative studies due to the heterogeneity of the hypothesis testing, research questions, and findings of each article, which precluded undertaking meta-analysis.

As data were extracted, findings were grouped into other similar topics and domains, leading to the identification of four overarching themes informed by the aims of the study. The process of aggregation occurred where findings that had been identified as communicating the same understanding of the phenomena of interest were grouped together as a confirmation of the finding (Popay et al., 2006). Conversely, the process of configuration occurred whereby key findings that were thematically diverse and not amendable to data pooling were used to extend, explain, or otherwise counter-argue other findings in an effort to gain greater insights and understanding (Sandelowski et al., 2013).

3 | RESULTS

The literature search yielded 3233 potentially relevant publications and after removing duplicates ($n = 1278$), including those that did not meet the inclusion criteria ($n = 1921$). A total of 36 studies were agreed upon for inclusion in the literature review (Figure 1). Overall, the final group of publications included nine Randomised Control Trials (Bleijenberg et al., 2016; Harrison et al., 2008; Houweling et al., 2011; Imhof et al., 2012; Jacobs et al., 2007; Murchie et al., 2003; Salisbury et al., 2002; Sande et al., 2020; Williams et al., 2005), nine qualitative studies (Clendon & White, 2001; Lindsay, 2001; Marshall et al., 2011; McNeal, 2019; Mills et al., 2012; Minstrell et al., 2015; Nymberg & Drevenhorn, 2016; Pritchard-Jones et al., 2015; Sullivan et al., 2022), three evaluation studies (Coddington et al., 2011; Dalton et al., 2023; Fernandez, 2007), four cross sectional studies (Fuller et al., 2020; Kor et al., 2022; Krothe & Clendon, 2006; Miles et al., 2003). In addition, four mixed methods studies were included (Frasso et al., 2017; Hammersley et al., 2022; Hegney et al., 2013; Wong & Chung, 2006), along with two cohort studies (Barello et al., 2022; Harvey et al., 2018), two multimethods studies (Hegarty et al., 2013), a needs analysis (Clendon & White, 2001), a case study (Callaghan et al., 2012), a secondary analysis (Bleijenberg et al., 2017) and an action research study (Mills & Fitzgerald, 2008).

Among the identified studies, 10 were conducted in Australia, 10 were conducted in the United Kingdom, six across other European countries, four in the United States, and two in Hong Kong. Other studies included one in Canada, and one in Malawi, with one being conducted across both New Zealand and the United States. The nomenclature of the clinics being run and/or operated by nurses was as heterogenic as each of the articles, with the most common designation being that of 'nurse-led clinic'. Other studies used terms

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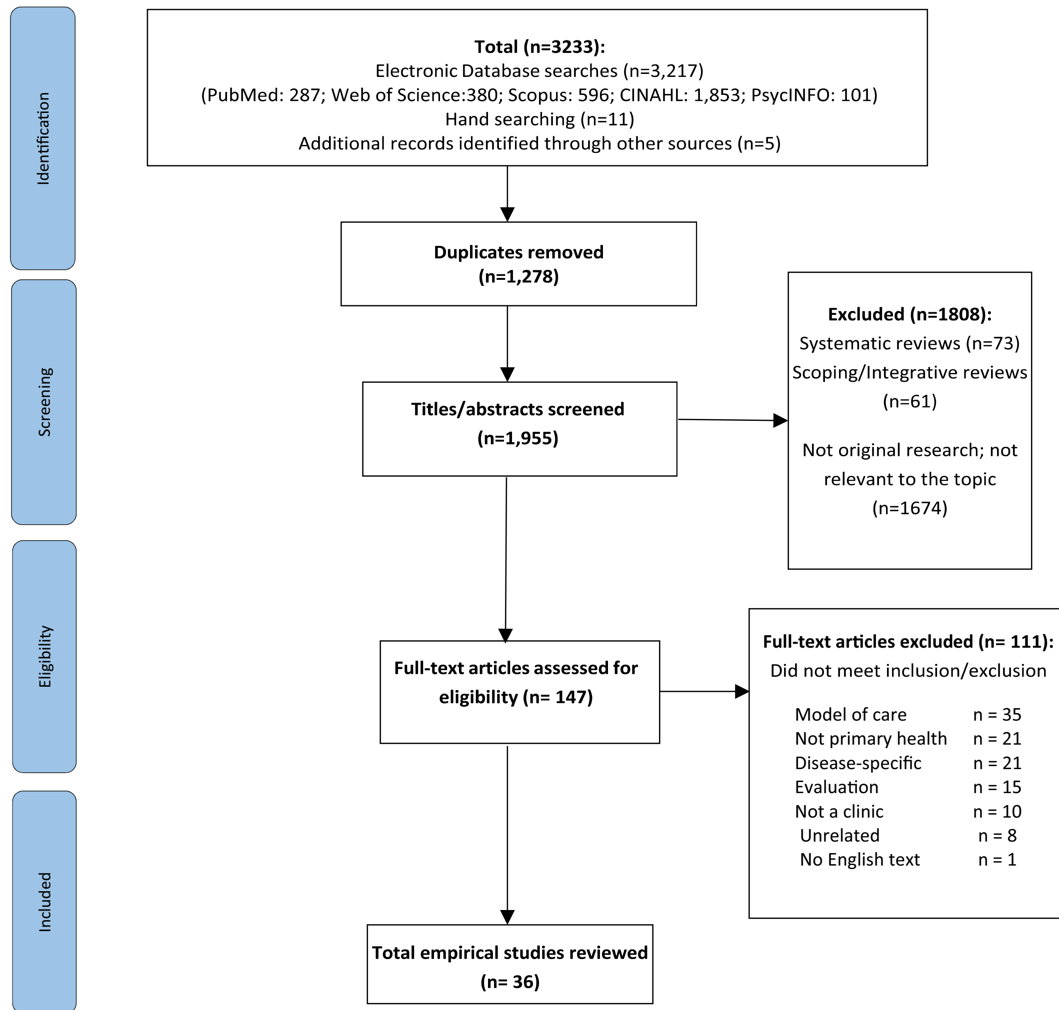

FIGURE 1 PRISMA flow diagram.

such as nurse-led 'practice', 'program', primary care', 'community model', 'managed clinic' or 'managed care'. Other articles used differing terms, such as nurse-practitioner-led (Clendon & White, 2001; Coddington et al., 2011; Harvey et al., 2018; Minstrell et al., 2015; Williams et al., 2005), nurse-specialist intervention, advanced practice nurse-led, or it was unclear or relatively silent regarding the nomenclature.

In addition to the diversity of the terms being used to describe the various nurse-led clinics, the health care focus of the various clinics was also heterogeneous. Clinics ranged from specific types of care being provided and included continence, multiple sclerosis, anticoagulant therapy, dementia, and sexual health, right through clinics with a much broader and complex focus beyond just one health condition. In these cases, they were focussed on chronic ill-health or elements of chronicity of health and ageing. The setting in which each nurse-led clinic occurred also differed, with 14 conducted in General Practices or primary care settings that were either within, adjacent to or separate to general practice. In addition, 12 occurred in community settings, and the remainder in schools, university, or lifestyle clinics. It must be noted that the settings of four nurse-led clinics were not well articulated.

Beyond the country, setting, nomenclature, focus of the clinic and the study design, only 13 studies provided a definition or partial explanation of what or how the nurse-led clinic functioned or operated. Additionally, 17 studies reported the barriers and enablers impacting successful implementation of nurse-led clinics in PHC settings. Despite less than half of the studies providing these insights, 32 studies discussed and reported what impact these nurse-led clinics had on patient outcomes and population health (Table 1) (see FileS4 file for overview of identified studies).

Four overarching themes, informed by the research objectives, included defining nurse-led clinics, enablers impacting on successful implementation, barriers impacting on successful implementation, and patient and population health impacts, along with several sub-themes.

3.1 | Defining nurse-led clinic

The literature provided scant or an unclear outline of what or how the nurse-led clinic or nurse-led care was constituted. Often, what a nurse-led clinic was, or how it functioned, remained

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TABLE 1 Context and overview of each of the identified studies.

Author (year)	Country	Setting	Nomenclature	Clinic focus	Nurse-led definition	Barriers	Enablers	Population or patient impact
(Barello et al., 2022)	Italy	Community	Nurse-led program	Multiple sclerosis	–	–	–	✓
(Bleijenberg et al., 2016)	Netherlands	General Practice	Nurse-led care	Frailty intervention	–	–	–	✓
(Bleijenberg et al., 2017)	Switzerland Netherland	Community	Nurse-led program	Older, 80+	–	–	–	✓
(Callaghan et al., 2012)	UK	Community	Nurse-led service	Blood-borne viruses	✓	–	–	✓
(Clendon & White, 2001)	NZ	School	Nurse practitioner-led	Sexual health	✓	–	✓	✓
(Coddington et al., 2011)	US	University clinic	Nurse-managed clinic	Paediatric/Youth health	✓	✓	–	✓
(Dalton et al., 2023)	Australia	General Practice	Nurse-led integrated care	Youth health	–	✓	✓	✓
(Fernandez, 2007)	UK	General Practice	Nurse specialist	Alcohol	–	–	–	✓
(Frasso et al., 2017)	US	Not clear	Nurse-led primary care	Not clear	–	–	✓	–
(Fuller et al., 2020)	UK	Not clear	Nurse-led care	Gout	–	–	–	✓
(Hammersley et al., 2022)	UK/Scotland	Primary health care	Nurse-led clinic	Allergy	–	✓	–	✓
(Harrison et al., 2008)	Canada	Community	Nurse-clinic/home care	Leg ulcer	–	–	–	✓
(Harvey et al., 2018)	Australia	Primary health care	Nurse-led community	Perinatal mental health	✓	–	–	✓
(Hegarty et al., 2013)	Australia	General Practice	Nurse-led clinic	Youth health	–	✓	✓	–
(Hegney et al., 2013)	Australia	General Practice	Nurse-led care	Chronic ill-health	–	✓	✓	–
(Houweling et al., 2011)	Netherlands	General Practice	Nurse care management	Diabetes	–	–	✓	✓
(Hennessy et al., 2000)	UK	General Practice	Nurse-led service	Anticoagulant therapy	–	–	–	✓
(Imhof et al., 2012)	Switzerland	Community	Advanced practice nurses-led	older, 80+	✓	–	–	✓
(Jacobs et al., 2007)	UK	General Practice	Nurse-led clinic	Cancer risk	–	–	–	✓
(Kor et al., 2022)	Hong Kong	Community	Nurse-led clinic	Dementia	✓	–	✓	✓
(Krothe & Clendon, 2006)	US/NZ	Community	Nurse-managed clinics	Not clear	–	✓	✓	–
(Lindsay, 2001)	UK	Community	Leg clinic	Leg ulcer	✓	–	–	✓
(Marshall et al., 2011)	NZ	community	Nurse-led clinic	Healthy Lifestyle Clinic	✓	✓		✓
(McNeal, 2019)	US	University clinic	Nurse-led/managed clinic	Virtual clinic	–	–	–	✓
(Miles et al., 2003)	UK	Not clear	Nurse-led clinic	Sexual health	✓	–	–	✓
(Mills & Fitzgerald, 2008)	Australia	General Practice	Nurse-led clinic	Cervical screening, Women's health care		✓	✓	✓
(Mills et al., 2012)	Australia	General Practice	Nurse-led care	Cervical screening Women's health care	✓	✓	✓	✓
(Minstrell et al., 2015)	Australia	University clinic	Nurse-led clinics	Dementia	✓	–	–	✓
(Murchie et al., 2003)	UK	General Practice	Nurse-led clinic	Coronary heart disease	–	–	–	✓

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TABLE 1 (Continued)

Author (year)	Country	Setting	Nomenclature	Clinic focus	Nurse-led definition	Barriers	Enablers	Population or patient impact
(Nymberg & Drevenhorn, 2016)	Sweden	Lifestyle clinic	Public Health Nurse-led	Chronic ill-health	–	✓	–	✓
(Pritchard-Jones et al., 2015)	Australia	Not clear	Nurse-led clinic	Hepatitis B (CALD focus)	–	✓	✓	✓
(Salisbury et al., 2002)	UK	School	Nurse-led/run clinic	Asthma	–	✓	–	✓
(Sande et al., 2020)	Malawi	Community	Nurse-led clinic	HIV	–	✓	–	✓
(Sullivan et al., 2022)	US	Primary health care	Nurse-led clinic	Pneumonia	✓	–	–	✓
(Williams et al., 2005)	UK	Community	Nurse Practitioner-led	Continence	–	–	–	✓
(Wong & Chung, 2006)	Hong Kong	Community	Nurse-led clinic	Not clear	✓	–	–	✓

ambiguous. However, among other identified literature, nurse-led clinics were either more clearly defined (Frasso et al., 2017; Mills & Fitzgerald, 2008; Wong & Chung, 2006) or the key principles or components of what constituted nurse-led clinics were collectively articulated (Harvey et al., 2018; Houweling et al., 2011; Imhof et al., 2012; Lindsay, 2001; Marshall et al., 2011; Miles et al., 2003; Mills et al., 2012; Nymberg & Drevenhorn, 2016; Sullivan et al., 2022). Within the context of these findings, these key principles are discussed in detail.

In the included literature, it was identified that that there are core components or principles that are essential to nurse-led care or nurse-led clinics. These principles within the texts varied and were dependant on government legislation, health care systems, policies, funding model and the setting in which nurses were practicing. They were also informed by the various clients, groups of clients, or community, along with disease specific or broader health care needs (Coddington et al., 2011; Frasso et al., 2017; Sullivan et al., 2022; Wong & Chung, 2006). As such, it was articulated that there must be a formalised structure of health care delivery where, regardless of setting, a nurse and a client interact. It is where a therapeutic relationship, built upon trust, enables a formal partnership to occur between health care professional, health care consumer and, as needed, their family (Coddington et al., 2011; Frasso et al., 2017; Harvey et al., 2018; Wong & Chung, 2006). In addition, it was noted that, within the PHC setting, the interaction and provision of service must be accessible and flexible in referral and delivery. It must be centred on evidence-based practice and treatment, encompassing the use of practice guidelines, protocols, and data to inform practice and patient outcomes (Coddington et al., 2011; Harvey et al., 2018; Houweling et al., 2011; Imhof et al., 2012; Kor et al., 2022; Mills et al., 2012; Mills & Fitzgerald, 2008; Nymberg & Drevenhorn, 2016).

The identified literature highlighted that a partnership between nurse and client must encourage self-determination that is centred on empowerment, autonomy and the principles of health, wellbeing and behavioural change. The partnership must employ a holistic patient-centred approach to address the health care needs of individuals and their families (Coddington et al., 2011; Frasso et al., 2017; Harvey et al., 2018; Imhof et al., 2012; Marshall et al., 2011;Miles et al., 2003; Mills et al., 2012; Wong & Chung, 2006). Further, it was suggested that nurse-led interventions need to move beyond task-oriented practice to be innovatively based on critical thinking and evidence integrating preventative care and maintaining wellbeing (Clendon & White, 2001; Frasso et al., 2017; Kor et al., 2022; Lindsay, 2001). Further, it should also encompass 'assessment and evaluation, health teaching/counselling, treatment and procedures, and case management' (Wong & Chung, 2006, p. 366). The purpose and goals of the nurse-led clinic were found to be outcome focussed and encompass prevention, symptom control, and maintenance of wellness of the individual and their families (Coddington et al., 2011; Frasso et al., 2017; Wong & Chung, 2006).

Overall, it was found that nurses in nurse-led clinics have the capacity to function independently, interdependently, or within a

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multidisciplinary team, and may seek support when care is outside scope of practice or beyond clinical expertise (Miles et al., 2003; Wong & Chung, 2006). In line with working and functioning independently, nurses within the PHC setting should be appropriately qualified with core skills and knowledge (Coddington et al., 2011). Completing accredited specialised training skills, where knowledge is developed relevant to a specific health care area in which care is then provided was also considered vital (Harvey et al., 2018; Kor et al., 2022; Mills et al., 2012; Minstrell et al., 2015; Wong & Chung, 2006). It was suggested that training may include, but not be limited to, Masters level and Nurse Practitioner training to provide highly competent nurses for specialised nurse-led clinics (Kor et al., 2022; Mills et al., 2012). Further, to ensure the quality and safety of care provided by independently practicing nurses and ensure that they work within the scope of their professional practice, it was recommended that credentialing and continuing professional development arrangements be established (Miles et al., 2003; Mills et al., 2012; Wong & Chung, 2006).

3.2 | Enablers impacting on successful implementation

In the included literature, there was limited detail to facilitate a comprehensive understanding of the overall enablers impacting on the successful implementation of nurse-led clinics in PHC settings. However, the implementation of nurse-led clinics centres on multidisciplinary consultation and input provided by external stakeholders, including clients themselves (Clendon & White, 2001; Dalton et al., 2023; Harvey et al., 2018; Hegarty et al., 2013; Krothe & Clendon, 2006; McNeal, 2019; Pritchard-Jones et al., 2015). The type and complexity of consultation and input is determined by the context, the focus, and objectives of the clinic (Clendon & White, 2001; Dalton et al., 2023; Harvey et al., 2018; Hegarty et al., 2013; Krothe & Clendon, 2006; McNeal, 2019; Pritchard-Jones et al., 2015). Despite the dearth of description regarding processes or procedures, clear principles enabled successful nurse-clinic implementation. Each enabling principle is grouped within two sub-themes – champions and partners and systems and processes.

3.2.1 | Champions and partners

An underlying principle to enable the success of a nurse-led clinic was having key champions, particularly among the medical profession (Dalton et al., 2023; Mills & Fitzgerald, 2008; Pritchard-Jones et al., 2015). As such, GPs are key to the success of a clinic, but also in advocating for the training of nurses and the shifting of tasks from the medical to the nursing profession (Dalton et al., 2023). Those GPs with previous positive exposure saw the benefits related to nurse-led clinics and this increased the endorsement and enabled future advocacy (Mills & Fitzgerald, 2008; Pritchard-Jones et al., 2015).

In addition to GP champions, building and continually investing in key partnerships with the community and key stakeholders was an essential element in the implementation of, trust in, and the longer-term viability of nurse-led clinics (Clendon & White, 2001; Krothe & Clendon, 2006; McNeal, 2019). These partnerships included, but were not limited to, community residents, potential clients and business representatives, along with education, faith, and social service providers (Krothe & Clendon, 2006). Further, clinics need to adapt their services to the needs of their clients. Consequently, nurse-led clinics must have an element of plasticity, flexibility, and affordability to move and adjust to the changing needs of their clients (Krothe & Clendon, 2006; Pritchard-Jones et al., 2015) (Harvey et al., 2018).

3.2.2 | Systems and processes

Within this sub-theme, an enabling implementation principle is creating an accessible and welcoming environment. This encompasses the physical clinic, having a comfortable environment to discuss health concerns, and health care consumers being treated with the respect (Hegarty et al., 2013; Krothe & Clendon, 2006). Communication, relationship building and ensuring adequate time is allocated to develop a therapeutic relationship were also essential elements of creating a welcoming environment (Harvey et al., 2018; Hegarty et al., 2013; Hegney et al., 2013; Krothe & Clendon, 2006).

In addition, a welcoming environment included that the nurse-led clinic was sensitive and adaptable to the needs of the specific culture and language of clients who may access the service (Krothe & Clendon, 2006; Pritchard-Jones et al., 2015). This diversity of cultures and languages may not always be accounted for in the development or running of a nurse-led clinic. If not addressed or embedded within the planning and development process, this may act as a barrier rather than an enabler for more vulnerable groups to access the benefits of the clinic (Pritchard-Jones et al., 2015).

Overall, greater clinic success was also achieved when the knowledge and skills of nurses extended into the skills of understanding the systems and processes of setting up and delivering nurse-led clinics (Hegarty et al., 2013). As such, key characteristics included consultation, open communication, evidence-based practices, having appropriate referral pathways, including client self-referral. There must be processes to ensure short appointment wait times, flexibility of working hours, and continuing professional development beyond expanding clinical skills (Coddington et al., 2011; Harvey et al., 2018; Kor et al., 2022; Mills & Fitzgerald, 2008). In addition, greater success was achieved through the use of nurse-led clinic guidelines, protocols and data collection to understand and increase the overall performance of a clinic in achieving its intended purpose (Harvey et al., 2018; Houweling et al., 2011; Mills et al., 2012; Mills & Fitzgerald, 2008; Nymberg & Drevenhorn, 2016).

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3.3 | Barriers impacting on successful implementation

Juxtaposing the enablers of successful implementation are several barriers and featured more predominantly than enablers within the literature. Each barrier identified are grouped within two overarching sub-themes that encompass key risk points and sustainability considerations.

3.3.1 | Key risk points

Several key risk points were identified and were associated with obtaining and sustaining adequate 'buy-in' from various parties regarding the development and use of nurse-led clinics. This encompasses GPs, Practice Managers, other agencies, and the community willingly and actively supporting or participating in nurse-led clinics. Specifically, a lack of support from GPs was considered the largest professional barrier (Dalton et al. 2023; Hegarty et al., 2013). At times, poor support was associated with territorial issues regarding who was best to do the work or provide the care (Hegarty et al., 2013). In other instances, a lack of support or resistance was associated with the view that a nurse-led clinic was a waste of resources or was perceived to be a vehicle that extending nurse's roles and scope of practice (Mills & Fitzgerald, 2008).

Practice Managers were also noted to be resistant to supporting nurse-led clinic endeavours, particularly when a change of Practice Manger had occurred (Dalton et al., 2023; Hegarty et al., 2013). The lack of support was often associated with the increased workload of practice staff while, in other cases, it was associated with less effective communication between parties that impacted on the relationship. Poor communication was found to have impacted all parties being informed regarding the needs of the clinic and where staff needed to be used (Hegarty et al., 2013; Sande et al., 2020).

In addition, Krothe and Clendon (2006) argued that buy-in from the community is also a key driver of nurse-led clinic success. There is a need for full community participation and where the clinic needs to be conducted 'with' rather than 'in' in the community. Such buy-in may encompass local participation, where solutions are co-designed as the community seek to respond to PHC (Krothe & Clendon, 2006). For success to be better achieved, there needs to be a move away from 'business as usual' to better meeting the needs of the community (Dalton et al., 2023; Hegarty et al., 2013; Marshall et al., 2011).

3.3.2 | Sustainability considerations

The literature also highlighted issues of sustainability must be considered to ensure the success or viability of a nurse-led clinic. Issues of funding were often front and centre, where time often equalled money (Coddington et al., 2011; Dalton et al., 2023; Hegney et al., 2013; Marshall et al., 2011), particularly among those health services that were considered small businesses (Mills & Fitzgerald, 2008). However, the focus was more than financial sustainability and generating money but was also centred on revenue generation being commensurate with the daily running costs of the clinic. As such, costs encompassed the actual running of the clinic, the time spent with individual patients, but also the level of investment required to set up a clinic. Further, it was also concerned with how and when these costs would be recouped, suggesting overall that proper economic evaluations, including cost analyses, are needed (Hegarty et al., 2013; Hegney et al., 2013; Salisbury et al., 2002).

It was suggested that the value generated by the nurse-led clinic—the health and social value among individuals, families, and communities—needed to be much higher than the dollar value generated through government rebates or benefits for the provision of care. This also included other sources of revenue generated through a nurse-led clinic. However, it was recognised that monetary value generated through nurse-led clinics needed to large enough to service clinic costs, including employee wages. Nevertheless, in some cases, funding, cost-recovery models, and fee for service models were often uncertain, insufficient and unsustainable (Coddington et al., 2011; Hegney et al., 2013; Marshall et al., 2011; Salisbury et al., 2002).

Beyond the financial sustainability of nurse-led clinics, other key elements were highlighted as barriers that impacted on their successful implementation in PHC. These were focussed on good health care policy being a moderator to clinic sustainability (Dalton et al., 2023), along with protocols and guidelines that drive nurse-led models of care so that it is commensurate with medical care in the PHC space (Hegney et al., 2013). Further, it was suggested that data must also drive evidence-based nurse-led care and decision-making. Mills et al. (2012) argues that competencies within nurse-led care, training requirements, addressing key workforce and health care needs, along with future policy, are all dependant on and require timely and accurate data reporting and this was not always well captured.

3.4 | Patient and population health impact

In addition to the enablers and barriers that impact successful implementation of nurse-led clinics, patient and population health outcomes of such clinics were highlighted. Despite the different clinic foci associated with the diverse health conditions that each clinic sought to address, similarities were identified. The findings, in terms of patient and population health outcomes, encompass three overarching themes, which include improved symptom management or health condition, commensurate outcomes and time satisfaction.

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3.4.1 | Improved symptom management or health condition

Among the studies and clinics identified, it was demonstrated that clients who attended nurse-led clinics experienced improvements in symptom management or health conditions compared to those receiving standard care, such as GP-led care. Examples include improved outcomes for depression and anxiety associated with perinatal mental health (Harvey et al., 2018) and improved continence symptom management and outcomes (Williams et al., 2005; Wong & Chung, 2006). A further example included improved management of gout along with a reduced number and severity of gout flare ups (Fuller et al., 2020). In addition, nurse-led clinics demonstrated improved medication adherence among clients experiencing Multiple Sclerosis (Barello et al., 2022) and those seeking perinatal mental health care (Harvey et al., 2018). In addition, coronary events and mortality were shown to be reduced over 4 years among clients with coronary health disease (Murchie et al., 2003). Lastly, in specific nurse-led clinics that supported frail aged clients, there were demonstrated lower levels of polypharmacy, pain and falls, along with lower levels of morbidly and mortality compared to standard care in general practice (Bleijenberg et al., 2016; Bleijenberg et al., 2017; Imhof et al., 2012).

3.4.2 | Commensurate outcomes

In addition to the positive outcomes highlighted, nurse-led clinic outcomes were found to be commensurate with current care being provided. For example, similar blood pressure, glucose and lipid regulation outcomes were achieved in nurse-led clinics associated with diabetes management when compared to standard care (Houweling et al., 2011). This was also observed in nurse-led clinics focussed on coronary care. It was demonstrated that attending a nurse-led clinic had no difference in outcomes when compared with standard care. Specifically, there was no difference between diet or exercise, however, nurse-led clinics demonstrated some impact on smoking cessation after 1 year when compared to standard care (Murchie et al., 2003). Additionally, among people who were frail and aged, similar daily functioning, number of emergency department presentations and number of hospital admissions were achieved after 1 year when compared with standard care in general practice (Bleijenberg et al., 2016; Bleijenberg et al., 2017; Imhof et al., 2012).

Consistent with commensurate outcomes, quality of life, in most cases, demonstrated little change when compared with standard care, such as GP-led care. For example, this was observed among teens with asthma (Salisbury et al., 2002), with diabetes management among older people (Houweling et al., 2011), and with the frail aged (Bleijenberg et al., 2016; Imhof et al., 2012). However, in some cases, quality of life was demonstrated to be vastly higher among clients after attending a nurse-led clinic associated with symptom management of allergies (Hammersley et al., 2022), or with continence care and support (Williams et al., 2005). There were mixed outcomes in term of quality of life, however one study highlighted that despite the nurse-led clinic not changing quality of life outcomes compared to standard care, what the nurse-led clinic offered was commensurate care. This commensurate care provided through the nurse-led clinic was considered more accessible, therefore had some impact on overall quality of life (Salisbury et al., 2002).

3.4.3 | Time and satisfaction

Although not directly related to patent and population health outcomes, time was argued to indirectly relate to improved health care outcomes and acceptability of the service, while impacting on client desirability to continue attending the clinic (Callaghan et al., 2012; Sande et al., 2020). For example, there were cases where having more time with the nurse in the nurse-led clinic, compared to standard care, was up to 100 minutes longer (Marshall et al., 2011). These longer consultation times were reported to enable a more holistic care approach being used. This led to improvements in disease-specific knowledge and greater sense of empowerment associated with a client's condition, while also impacting on quality of life (Callaghan et al., 2012; Fuller et al., 2020; Hammersley et al., 2022; Harvey et al., 2018; Laurant et al., 2005; Marshall et al., 2011; Sande et al., 2020).

The longer consultation time enabled greater communication and a more personal and trusted relationship being developed between nurse and client. This allowed a shift in focus from symptom management, to providing time for questions to be asked, and greater insights to be provided to clients (Fuller et al., 2020; Hammersley et al., 2022; Hegney et al., 2013; Houweling et al., 2011; Lindsay, 2001; Marshall et al., 2011; Nymberg & Drevenhorn, 2016; Salisbury et al., 2002; Sande et al., 2020). The additional time impacted on the daily lives of clients in terms of their health literacy, navigating their condition, feeling more invested in self-managing their health. This improved compliance such as medication management, diet and exercise, and addressing any anxieties they may have associated with their condition (Fuller et al., 2020; Hammersley et al., 2022; Houweling et al., 2011; Lindsay, 2001; Marshall et al., 2011; Nymberg & Drevenhorn, 2016; Salisbury et al., 2002; Sande et al., 2020). Overall, it was found that clients felt more supported and appreciated compared with standard care (Hammersley et al., 2022). However, despite these positives, there were challenges associated with the structure of consultations (Sande et al., 2020), client adherence to nurse recommendations (Kor et al., 2022) and professional boundaries being crossed. For example, the close and more personal nature of longer and frequent consultations led to patients not being serious within the professional-patient encounter and contributing to poor adherence to nurse recommendations (Sande et al., 2020).

Client satisfaction with care was also measured by several of the identified studies. Although client satisfaction may be considered secondary to patient or population health outcomes, in addition to

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time, client satisfaction was highlighted to impact consultation frequency and continuity. As such, those who were less satisfied returning less frequently (Callaghan et al., 2012; Dalton et al., 2023; Laurant et al., 2005; Sande et al., 2020; Wong & Chung, 2006). It was noted that female clients were satisfied with the care (Miles et al., 2003) and client satisfaction was often centred on the interpersonal skills of the nurses providing care within the clinic (Fuller et al., 2020). In addition, satisfaction was associated with several issues that could be addressed within the one consultation. However, this may be due to the nature of the specific nurse-led clinic, such as sexual health issues being addressed beyond the initial need for attending (Fuller et al., 2020).

4 | DISCUSSION

A number of insights were gained though undertaking a comprehensive review of the literature on Australian and international models of nurse-led clinics in PHC. First and foremost, there is no clear, singular definition of 'nurse-led clinic' or 'nurse-led care' which has prompted recent calls for a clear definition of what it is and its core components (Lee, 2023). Regardless of how nurse-led care and nurse-led clinics have been defined in the past or how they may be currently viewed or understood, we offer a more robust and contemporary definition here. This is based on synergies with current definitions, along with a constellation of guiding principles within the literature that informs what nurse-led clinic or nurse-led care are and how they operate.

Nurse-led care is a therapeutic relationship between a nurse and a health consumer, undifferentiated by need, is built on trust and a focus on self-determination, and encompasses patient-centred empowerment, autonomy and principles of holistic health, wellbeing, and behavioural change. Regardless of setting, nurse-led care remains adaptive to the environment in which it occurs, is flexible in referral processes and accessible to health care consumers in its delivery. It is centred on evidence-based practice, decision-making, and treatment, which incorporates agreed practice guidelines, protocols, and care pathways, along with evidence-based data that informs simple or complex practices and patient outcomes.

Nurse-led care is more than task-oriented practice. It is innovative and outcomes focussed, and includes prevention, symptom control, wellness maintenance of the individual and their family. This is achieved through critical thinking, evidence integrating preventative care, while encompassing best-practice assessment, evaluation, treatment, procedures, monitoring, education, counselling, case management, coordination and referral.

In nurse-led care, nurses have the capacity, as primary providers, to function independently, autonomously and interdependently with others. They may participate in collaborative, multidisciplinary teams and networks, and seek support when care is outside their scope of practice or beyond their clinical expertise. Nurses are appropriately qualified with core skills and knowledge to meet the requirements of nurse-led care, however, may require additional specialised or advanced training to further their scope of practice relevant to specific health care needs of consumers. Credentialing and continuing professional development must be standard practice within nurse-led care to ensure care quality and safety.

Nurse-led clinics are not always situated in a place, but rather comprise sets of actions, processes, and human interactions that strive to achieve certain goals. As such, nurse-led clinics offer nurse-led care provided within a formalised framework of heterogeneous components constituted through government legislation, regulatory bodies, health care policy, funding models, health care systems, or the setting in which nurses act. Further, nurse-led clinics may be informed by and evolve in response to the needs of health care consumers, community or lobby groups, key health conditions within a community, broader population needs, or other health professionals. Health care consumers.

It is these foundational guiding principles that underline what nurse-led is and how it needs to operate, which are impacted by the complexity and the heterogeneity of what both nurses 'do' and the environments in which they 'act'—arguably between and within environments.

Beyond the contemporary definition provided here, the enablers and barriers impacting on the success of a nurse-led clinic are centred on having key champions to support nurses, and the clinic development and its sustainability. This review has found that, in most cases, the champions who may be potential roadblocks to the successful implementation of nurse-led clinics are members of the medical profession, and maintaining these relationships, their buy-in and support remain critical (Dalton et al., 2023; Karimi-Shahanjarini et al., 2019; Mills & Fitzgerald, 2008; Pritchard-Jones et al., 2015). As such, when greater understanding, competence, and the associated lightening of burden can be clearly demonstrated, as nurses take on certain elements of medical care within the PHC space, this will further shaped attitudes of collaboration and acceptance (Dalton et al., 2023; Mills & Fitzgerald, 2008; Shields & Watson, 2007). Nevertheless, it remains vital to ensure medical practitioners, practice managers, and nurses see and experience how nurse-led clinics work and function, while also being part of ongoing conversation in nurse-led clinic development to ensure future advocacy.

In addition to working collaboratively, additional successes of a nurse-led clinic are also predicated upon building and investing in relationships and partnerships with the community and key stakeholders to ensure they could also trust the nurse-led clinic. Community and external stakeholder buy-in remains a key driver of nurse-led clinic success, which impacts on its long-term viability (Clendon & White, 2001; Dalton et al., 2023; Frasso et al., 2017; Hegarty et al., 2013; Krothe & Clendon, 2006; McNeal, 2019; Pritchard-Jones et al., 2015).

Along with key advocates for success, financial sustainability must be commensurate with the true costs associated with a nurse-led clinic. This includes looking beyond user-pays funding models to include changes to health care policy and current funding models that preclude funding nurse-led care (Coddington et al., 2011; Dalton et al., 2023; Hegarty et al., 2013; Hegney et al., 2013; Marshall

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et al., 2011; Salisbury et al., 2002). Overall, this highlights the essential need for nurses to understand and calculate true costs, while also understanding that positive cash flow and a sustainable, cost-effective model remains central to the long-term viability of providing nurse-led clinics (Coddington et al., 2011; Hegney et al., 2013; Marshall et al., 2011; Salisbury et al., 2002).

Good health care policy, along with protocols, guidelines, and data informed evidence-based care will drive good nurse-led models of care. Further, timely and accurate data reporting are essential to the sustainability of nurse-led clinics (Dalton et al., 2023; Hegney et al., 2013; Mills et al., 2012). This also requires a level of governance to ensure risk mitigation is developed and risk appetites are in place to address any foreseeable or unforeseeable risk that may arise when executing a nurse-led clinic. This may include, but not be limited to, funding, staff, champions, and changes to key stakeholders, advocates, and needs of clients that may occur over time (Dalton et al., 2023; Hegarty et al., 2013; Marshall et al., 2011).

A key finding of this review is that patient and population health impact achieved by nurse-led clinics, on the most part, were either better than or at least commensurate with GP-led care. This is regardless of being measured against disease-specific parameters or outcomes, medication adherence, and lower levels of morbidly and mortality (Barello et al., 2022; Bleijenberg et al., 2016; Bleijenberg et al., 2017; Fuller et al., 2020; Harvey et al., 2018; Houweling et al., 2011; Imhof et al., 2012; Karimi-Shahanjarini et al., 2019; Laurant et al., 2005; Murchie et al., 2003; Williams et al., 2005; Wong & Chung, 2006). It was nonetheless noted that some nurse-led care had little to no impact on health behavioural change, such as diet or exercise, or on quality of life (Bleijenberg et al., 2016; Houweling et al., 2011; Imhof et al., 2012; Murchie et al., 2003; Salisbury et al., 2002), but this was not always the case (Hammersley et al., 2022; Williams et al., 2005). As such, nurse-led clinics may not replace, but may need to be considered complementary to current health services (Imhof et al., 2012, p. 2229). Overall, in these cases the care that was provided was not in any way detrimental or averse to standard care being provided by GPs or other services. However, in many cases it was the overall cost of delivery that was less than standard care, which led to similar outcomes being achieved (Hegney et al., 2013). This suggests that, for lower costs, similar health outcomes may be achieved within the PHC setting, however, this is yet to be clearly determined (Hegney et al., 2013; Laurant et al., 2005).

In addition to commensurate care for lower costs, the indirect impact on patient and population health outcomes were associated with greater accessibility. For example, greater accessibility was through timeliness of care, capacity to self-refer and the feeling of safety or approachability with nurse-led care or in the spaces where the care was provided (Coddington et al., 2011; Hammersley et al., 2022; Jacobs et al., 2007; Karimi-Shahanjarini et al., 2019; Kor et al., 2022; McNeal, 2019; Minstrell et al., 2015; Pritchard-Jones et al., 2015; Salisbury et al., 2002). Having more time with the nurse compared with the medical practitioner leads to more holistic care and improvements in disease-specific knowledge and a greater sense of empowerment associated with a client's condition (Callaghan et al., 2012; Fuller et al., 2020; Hadi et al., 2016; Hammersley et al., 2022; Harvey et al., 2018; Hegney et al., 2013; Keleher et al., 2009; Marshall et al., 2011; Sande et al., 2020).

Regardless, the longer consultation time spent with clients, along with timely appointments and shorter waiting times, were positive and a key driver for improved patient knowledge, greater sense of control, enhanced whole of person interactions and greater satisfaction among clients (Karimi-Shahanjarini et al., 2019; Laurant et al., 2005; Moore et al., 2006). Overall, nurse-led clinics are better placed to meet the needs of health care consumers and are a more equitable way to engage with those hard-to-reach or more vulnerable populations. As such, the customisation of care, along with greater consultation time, follow-up and overall health service access, may lead to improved health and well-being outcomes (Pritchard-Jones et al., 2015).

4.1 | Limitations

This review was limited to peer-reviewed empirical evidence associated with nurse-led clinics within PHC settings and did not include studies that were multidisciplinary. This review may have further limitations due to only examining articles that were published in English, and citation bias needs to be considered due to the inclusion of hand searching to identify additional relevant studies. Due to the heterogeneity across research articles in terms of hypotheses, research questions, methodology, study design, outcome measures, and findings, we were unable to perform meta-analysis and other sensitivity analyses to provide quantitative estimates. These limitations necessarily impact on the potential generalisability of the findings of this review.

4.2 | Future research

Contributing to the heterogeneity of included studies in this review, was the lack of robust research methods and findings to ascertain the true effect or clear difference between nurse-led and GP-led clinics (Callaghan et al., 2012). The differing or absence of agreed definitions of nurse-led care and nurse-led clinics is a fundamental impediment to undertaking research into their efficacy and effectiveness. Although many studies identified the positive impact, others found very little difference. The positive impacts may be more due to the increased time spent with health care consumers than who was providing care within this time (Karimi-Shahanjarini et al., 2019). As such it is recommended that further randomised control trials be undertaken, not only to confirm some of the findings already in place, but to also test the efficacy and effectiveness of the various interventions in achieving impactful outcomes (Barello et al., 2022; Callaghan et al., 2012; Hammersley et al., 2022). Studies that examine the best combination and intensity of the various interventions within nurse-led clinics using more robust methods may be ideal (Bleijenberg et al., 2016).

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An examination of the quality of relationships between the nurse and health consumer is required to understand what impact the care has on the whole person rather than determining impact by a number of biomedical markers (Bleijenberg et al., 2017; Kor et al., 2022). Additional research needs to examine how best to optimise nurse-led care within the PHC setting, what training needs are required, along with how best to manage barriers within the system. This examination may also involve health care consumers, particularly those from culturally and linguistically diverse backgrounds (Mills et al., 2012; Pritchard-Jones et al., 2015).

Lastly, it is vital to undertake a more comprehensive examination of the cost–benefit of nurse-led clinics as, while current literature has highlighted some cost differences between nurse-led and standard care, the results were not definitive. As such, a more robust economic examination of nurse-led clinics may provide a deeper and clearer understanding of true costs relative to the clinical outcomes, along with the individual and wider community health benefits (Coddington et al., 2011; Hammersley et al., 2022; Hegarty et al., 2013). Such examination may further provide incentive for counting practice nurse time towards current longer complex consultations with GPs or more dedicated government rebates or benefits to facilitate greater update of nurse-led clinics in PHC settings (Dalton et al., 2023; Murphy et al., 2023).

5 | CONCLUSION

The review highlights several similarities across studies that are linked to the barriers and enablers of successful nurse-led clinic implementation and health outcomes. These insights can help to inform the future development of nurse-led clinics and policy frameworks to ensure the development and implementation of nurse-led clinics into the future. There is an increased emphasis of moving towards greater PHC interventions, due to the burgeoning use of tertiary health care. In addition, due to the greater reliance on GPs, who are unable to keep up with health care demand, nurse-led care and nurse-led clinics are well positioned to provide commensurate care, or at the very least, enable the support of future consumer and community demands.

Offering greater clarity on defining 'nurse-led care' and 'nurse-led clinics' can provide a basis for future development, implementation and evaluation efforts. In addition, it has been highlighted that key champions, partners, systems, and processes to support nurse-led clinics are vital to ensure their success. Further, nurse-led clinic success is also centred on managing key risks, while ensuring clinic sustainability in terms of finances, evidence, and policy. These fundamental elements must be central and are highly recommended when developing interventional nurse-led strategies to resolve and address community driven, health professional and policy supported, health care within PHC settings. Further, research on the establishment, efficacy and effectiveness of nurse-led clinics is needed to establish a more robust and translatable evidence base.

AUTHOR CONTRIBUTIONS

Daniel Terry: Data Curation; Formal Analysis; Investigation; Methodology; Visualisation; Original Draft Preparation; Review & Editing. (Contribution: 50%); **Danny Hills**: Conceptualization; Data Curation; Formal Analysis; Investigation; Methodology; Project Administration; Visualisation; Original Draft Preparation; Review & Editing. (Contribution: 30%); and **Cressida Bradley**: Conceptualization; Visualisation; Original Draft Preparation; Review & Editing. (Contribution: 20%).

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DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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SUPPORTING INFORMATION

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